Process-oriented Learning and Information eXchange

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Information Society Technologies

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1 Executive Summary

This document gives an overview as well as detailed instructions on how to use the functionalities of the Graphical Learning Modeller (GLM). The Graphical Learning Modeller was developed in the PROLIX project (http://prolixproject.org) and supports the easy modelling of learning designs and learning design templates within the PROLIX Learning Life Cycle.

2 Quick summary of instructions

- Download the latest version of the GLM from http://sourceforge.net/projects/prolix-glm
- After unpacking, open the "prolix-glm.exe" file.
- Start designing by choosing from the menu bar "New Prolix Learning Design".
- Using the Palette on the right, drag & drop activities onto the workspace. You may also drag & drop selection points, synchronisation points, basic templates, and one end point onto the workspace.
- Create new roles, add-ons, and tools & materials by right-clicking in the corresponding instances trees on the left (use the navigation on the left to see the trees).
- Drag & drop roles, add-ons and tools & materials ONTO activities in the workspace to directly assign them.
- Connect activities to each other using the Connection Function in the Palette (also connect all selection and synchronisation points) to indicate the learning sequence.

  Start your sequence at the start point. End the sequence with the end point. Important: Every activity and every point (except start and end points) MUST have at least one arrow going into and one arrow going out of it.
- To export your Learning Design in order to create an IMS Learning Design unit of learning, click the "Generate runnable unit of learning" tab in the main navigation.

3 Detailed Instructions

3.1 Installation

1. Download the latest version of the GLM from http://sourceforge.net/projects/prolix-glm You need to have installed a Java Runtime Environment (JRE) of Java Development Kit (JDK) of version 1.6 or higher to run the GLM.

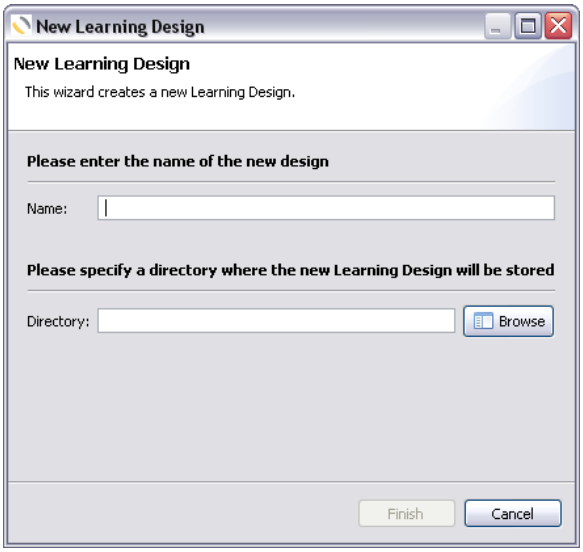
2. After saving, extract/unpack the zip-file in a folder of your choice. Usually, you right-click on the zip-file and choose “Extract here”, or similar.

3. Once the zip-file is unpacked, open the file “prolix-glm.exe” inside the folder.

3.2 Getting started

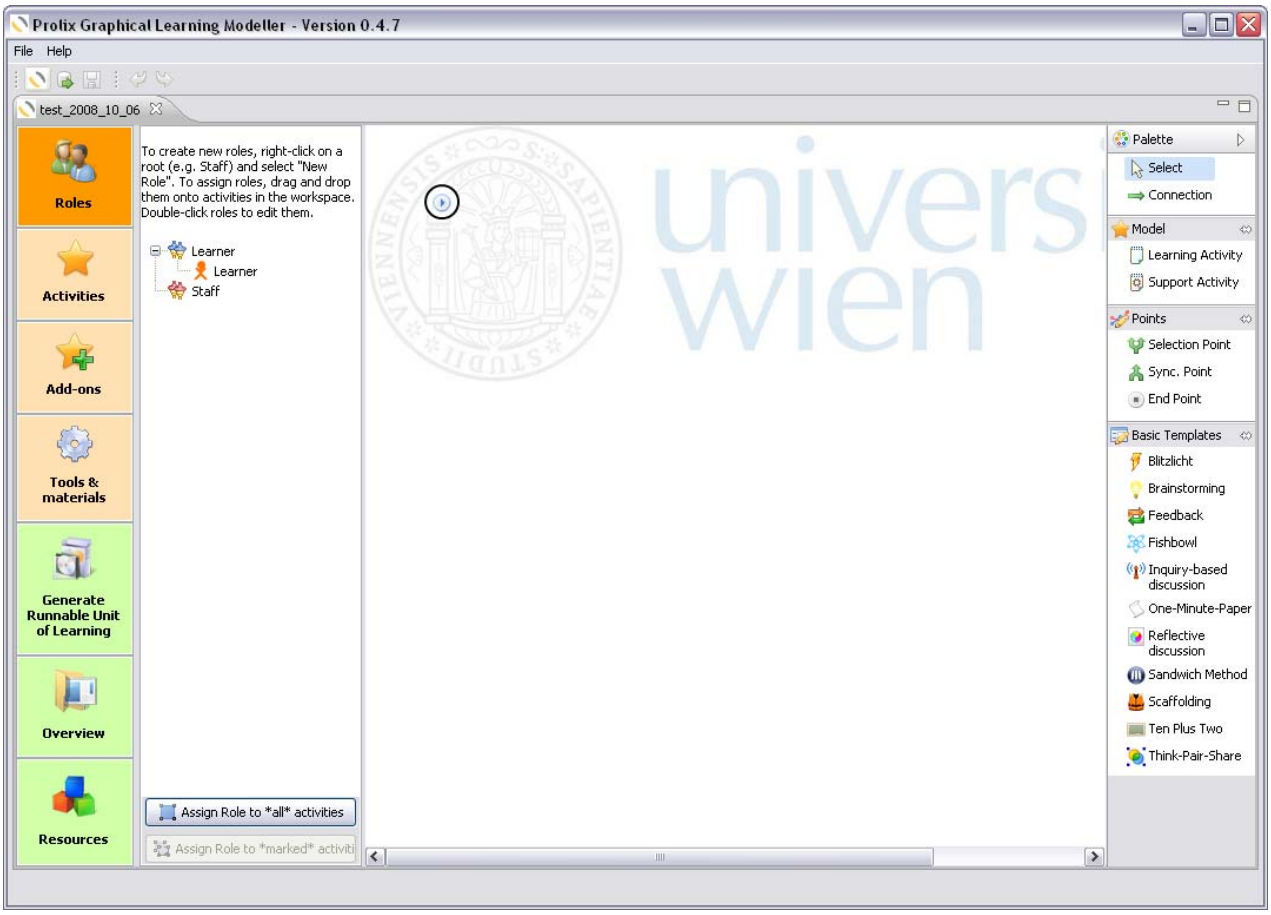
1. When first opening the GLM, you see a menu bar on the top. To open an existing learning design, use the “Open learning design” button in the top menu bar .

2. To create a new learning design, click on the first tab from the left “New Prolix Learning Design”. The following window opens:



Give your learning design a name. Then select a place, where your learning design will be saved (click on “Browse” to choose the location).

3. Once you hit “Finish”, you will see the actual GLM interface and workspace:



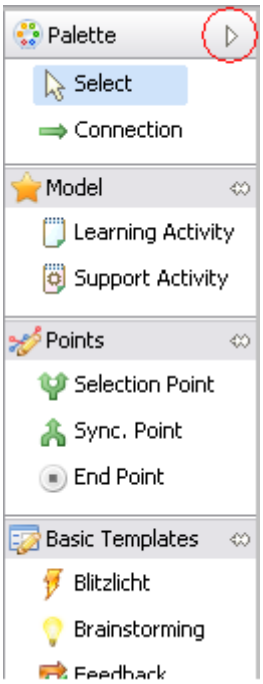
- Your main navigation bar is located on the left.
- Next to the main navigation is your currently selected instances tree (here: Roles).
- To its right is the workspace that holds your learning design.
- Your design palette with the design functions is located on the right.

4. You may move all frame divisions and windows in the GLM at your leisure.

5. Throughout the software, you may use the information buttons to find out more about specific design elements.

3.3 Design Palette

To start your design, use the palette on the right to drag & drop *Models* (learning activities & support activities), *Points* (selection point, synchronisation point, end point) and *Basic Templates* (preconfigured learning design templates) onto the workspace. You may collapse the Palette to create more room for the workspace by clicking the small arrow next to the word “Palette”.



3.4 Activities

1. There are two types of activities: learning activities and support activities. Their fundamental distinction is that learning activities have learning objectives while support activities do not have learning objectives. In general, support activities are seen as teaching activities.

2. After dragging activities from the palette onto the workspace, an “Edit” window automatically opens, where you may provide, among others, a name and description for the activity. When you click OK within this dialog, your activity appears in the workspace:

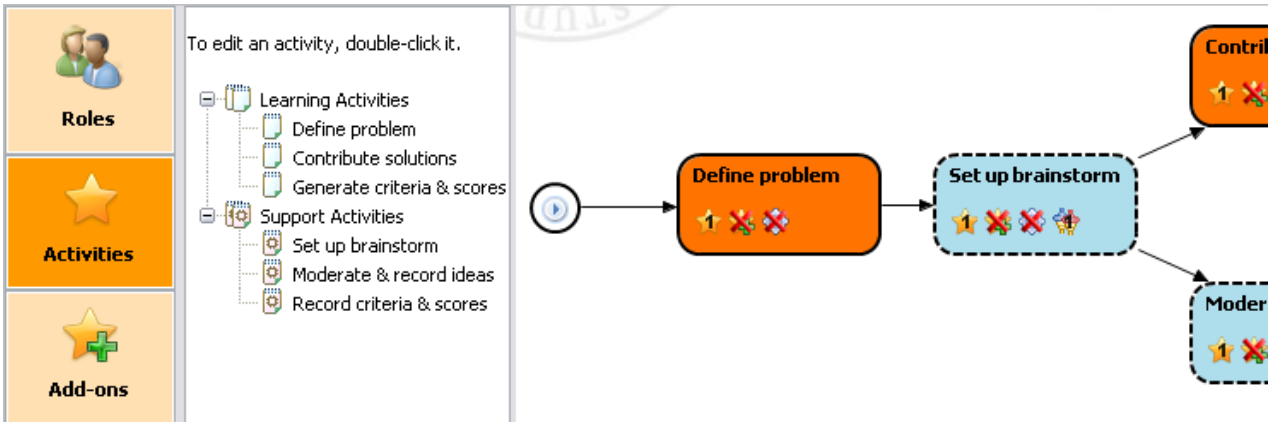
   The activity’s name is displayed on the top, and there are symbols on the bottom of the activity box. The activity box has a white background colour as long as the activity does not have a role assigned to it.

3. The symbols in the bottom half of each activity box help you identify what status the activity has. The currently implemented symbols are (in order of appearance from left to right):
   a. The number of activity descriptions assigned to the activity (in this example: one).
   b. The number of add-ons assigned to the activity (in this example: three).
   c. The number of tools & materials assigned to the activity (in this example: two).
   d. *Only used for support activities*: The number of roles to be supported by this support activity (in this example: two).

If these symbols are crossed out, e.g. , the activity does not have the corresponding feature, i.e. does not have an activity description, does not have add-ons, does not have tools or materials assigned.

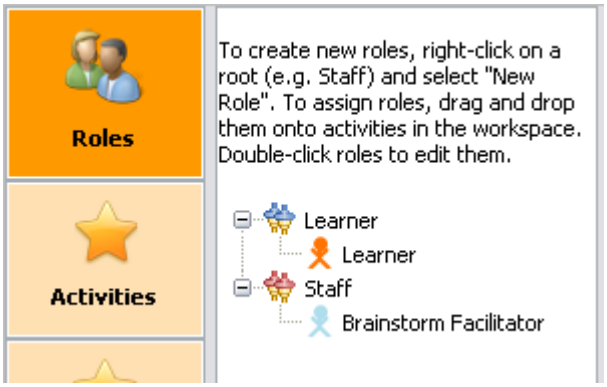
4. You may edit the specifics of each activity by double-clicking it, either in the workspace or in the instances tree.

5. Every activity you create in the workspace will also be recorded in a list – the instances tree – so that you keep the overview of your created activities. Click the "Activities" tab in the left navigation to see the list of all activities as depicted below.



3.5 Roles

1. To create a new role, you must first select the "Roles" tab from the main menu on the left.


Roles
Activities
To create new roles, right-click on a root (e.g. Staff) and select "New Role". To assign roles, drag and drop them onto activities in the workspace. Double-click roles to edit them.
Learner
Learner
Staff
Brainstorm Facilitator

2. Right-click on either one of the roots ("Learner" or "Staff") and select "New Role". Then, assign a name and colour to the role.

3. Drag a role ONTO an activity in the workspace to specify what activity/activities the role performs. The activity will immediately take on the colour of the assigned role.

4. You may edit roles by double-clicking them in the instance tree (shown above). To change the colour of the role, right-click the role and select "Change color".

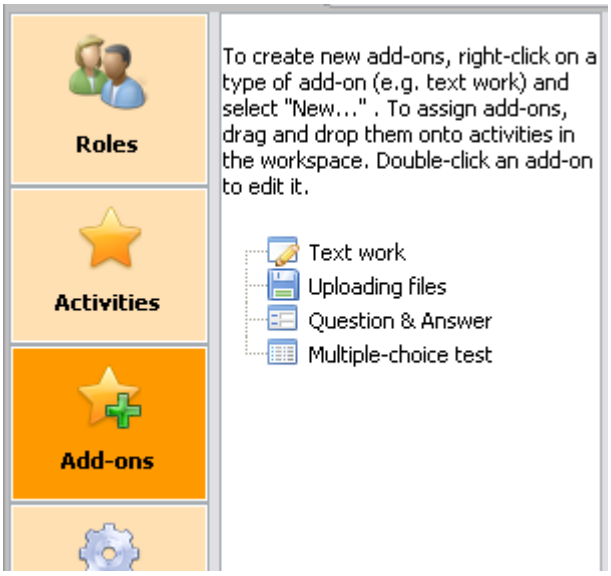
5. For each role, you may also create sub-roles, so-called child roles. Right-click on the role and choose "New Child Role". Proceed by giving the child-role a name and colour.

3.6 Add-Ons

3.6.1 What are Add-ons?

1. Add-ons are special design elements to allow active participation of persons within the unit of learning. Add-ons are used whenever a person actively contributes, for example, when a person inserts comments, uploads a file, or assigns grades as part of an activity in the learning design. During design time (i.e. while you create the learning design in the GLM), the frame for this active contribution is set up (e.g. specifying that a text box and instructions will be displayed), while the actual contents (comments, files, grades etc.) are provided by the person when the unit of learning is executed in the learning management system[1].

2. When you first click on the "Add-ons" tab in the left menu, you see the following tree:

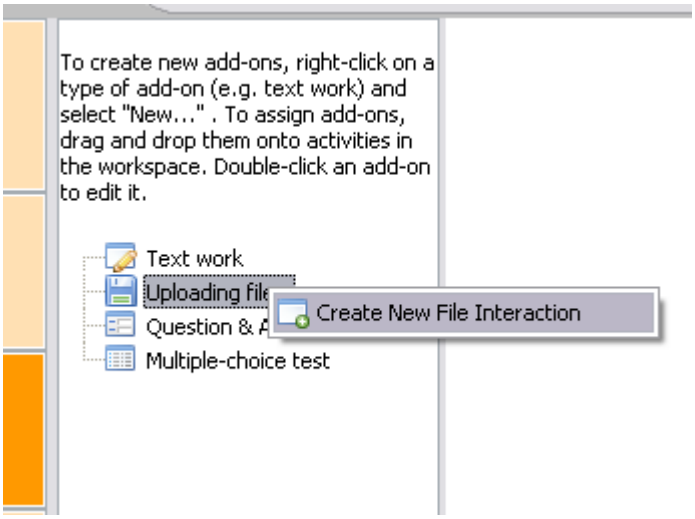

Roles
Activities
Add-ons
To create new add-ons, right-click on a type of add-on (e.g. text work) and select "New..." . To assign add-ons, drag and drop them onto activities in the workspace. Double-click an add-on to edit it.
Text work
Uploading files
Question & Answer
Multiple-choice test

The four types of add-ons are described as follows:
Text work: involves the writing of a text. A text box will be provided in the learning management system for the participating persons to write their text.
Uploading files: allows the uploading of an external file into the learning management system. A field to specify the path from where the file is uploaded is presented in the learning management system.
Question & Answer: questions are presented and answers to these questions can be typed in a text box below each question. You have the choice to either define questions at this time (in the GLM), or to let a person in a role later define questions within the learning management system when the unit of learning is executed.
Multiple-choice test: questions are presented that have predefined answers. One answer is chosen to respond to the question in the learning management system. Questions and answers may either be defined at this time (i.e. in the GLM) or later within the learning management system.

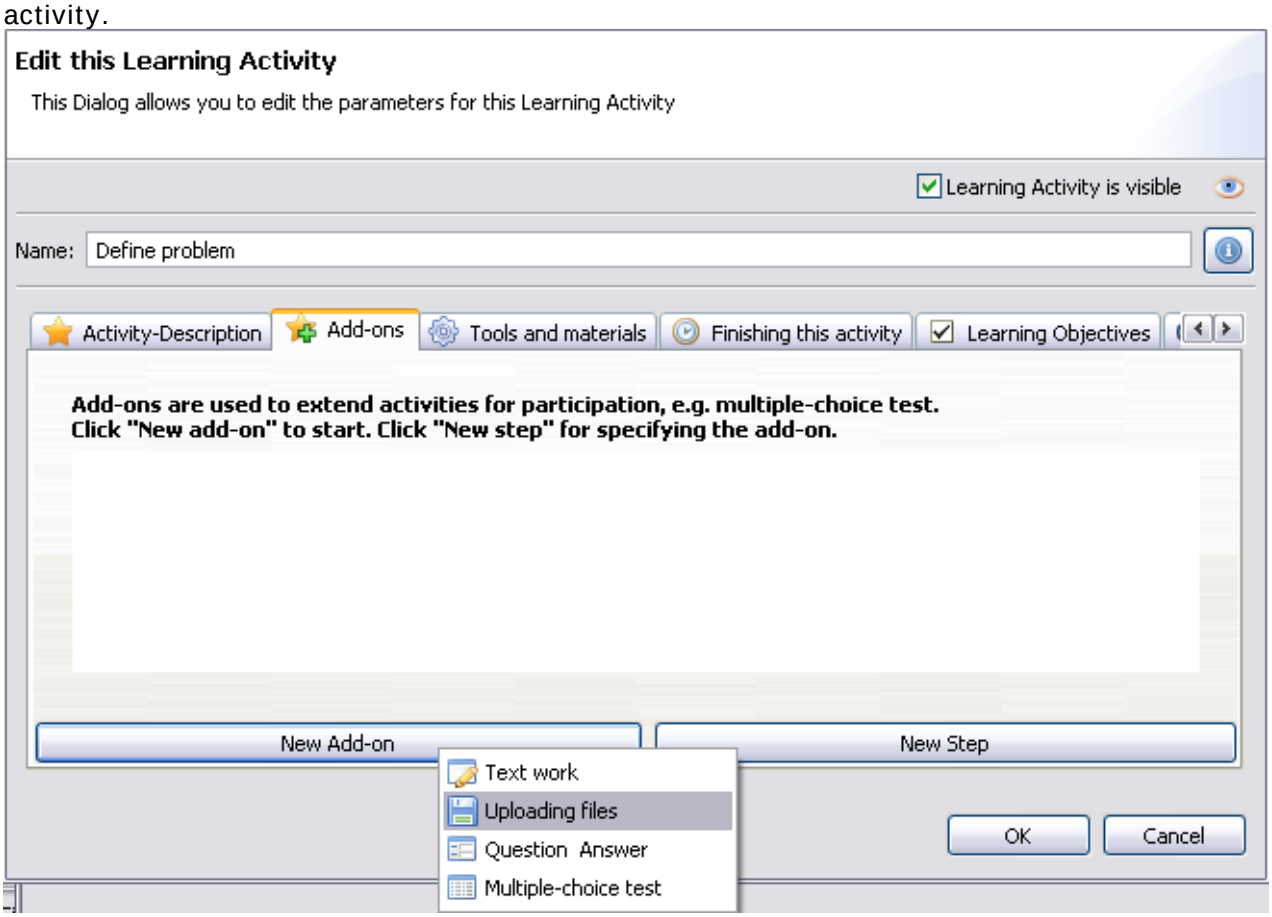
[1] For learning designers, who have knowledge of IMS Learning Design: Add-ons employ level B functions of the IMS LD specification. They package level B properties and conditions in a way that learning designers may easily understand and use them.

3.6.2 How to create new add-ons

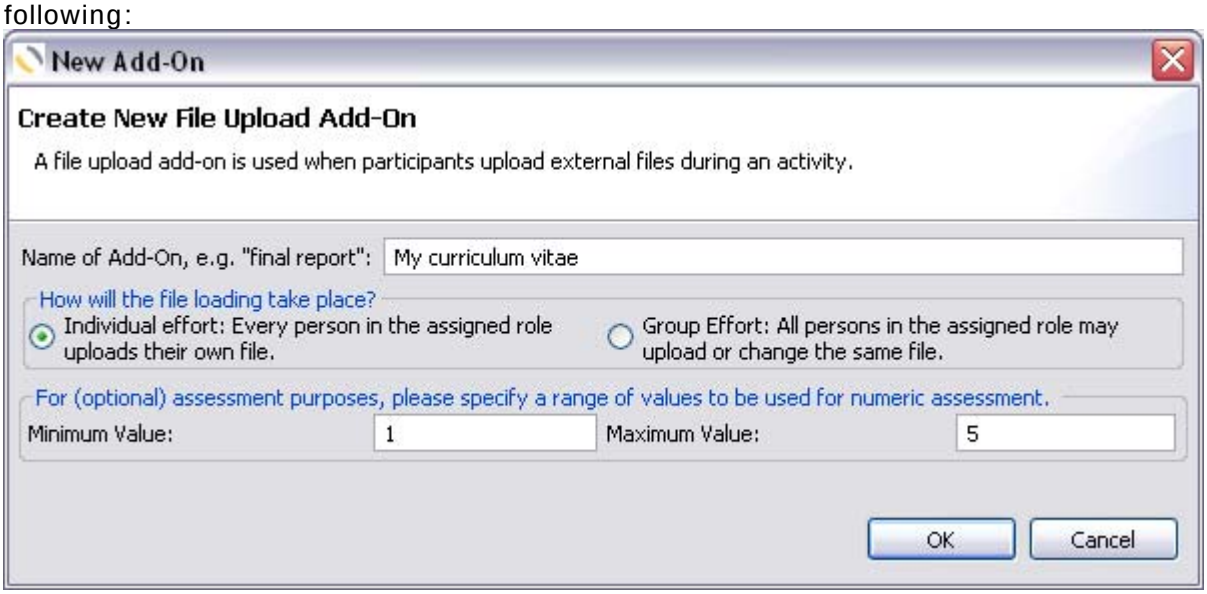
1. There are two ways to create new add-ons, either via the instances tree, or directly within activities.
   A) In the instances tree (depicted below), right-click on one of the four types of add-ons and select “Create New … Interaction”.


To create new add-ons, right-click on a type of add-on (e.g. text work) and select "New..." . To assign add-ons, drag and drop them onto activities in the workspace. Double-click an add-on to edit it.
Text work
Uploading file
Question & A
Multiple-choice test
Create New File Interaction

   B) Within any *Edit Activity Dialog*, i.e. when you double-click an activity in the workspace, select the tab “Add-ons” (depicted below). At the bottom, you then see two buttons. Click the button “New Add-on”, and choose the type of add-on you want to include in the activity.



2. In either case of creating a new add-on, you will be presented a dialog that looks like the following:


New Add-On
Create New File Upload Add-On
A file upload add-on is used when participants upload external files during an activity.
Name of Add-On, e.g. "final report":
My curriculum vitae
How will the file loading take place?
Individual effort: Every person in the assigned role uploads their own file.
Group Effort: All persons in the assigned role may upload or change the same file.
For (optional) assessment purposes, please specify a range of values to be used for numeric assessment.
Minimum Value:
1
Maximum Value:
5
OK
Cancel

Here, you specify who will upload a new file (or write a text etc.). You choose between individuals and groups. When you choose “individual effort”, every person him- or herself uploads a personal file (or writes a personal text etc.). For “group effort”, all persons belonging to a certain role (the role that performs the activity) contribute a common file that represents all other persons in the role. This means that the file is changed/overwritten whenever another person of that role uploads a (new) file. For text-writing this means that all persons of the same role can commonly contribute to the same text, much like a wiki.

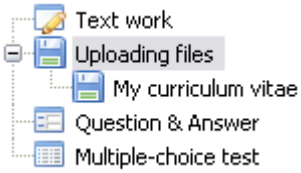
On the bottom of this dialog, you specify a range of values that can be used during numeric assessment. Specify a range. In the picture above, the range is 1 to 5, which means that during an optional assessment, the uploaded file may be graded with a score of 1, 2, 3, 4, or 5.

Click OK when you are finished.

3.6.3 Specifying Add-ons with Steps

1. Once a new add-on has been created, e.g. file upload, you are ready to customize the add-on to your needs. Depending on how you created the add-on, there are two ways how you specify the add-on.

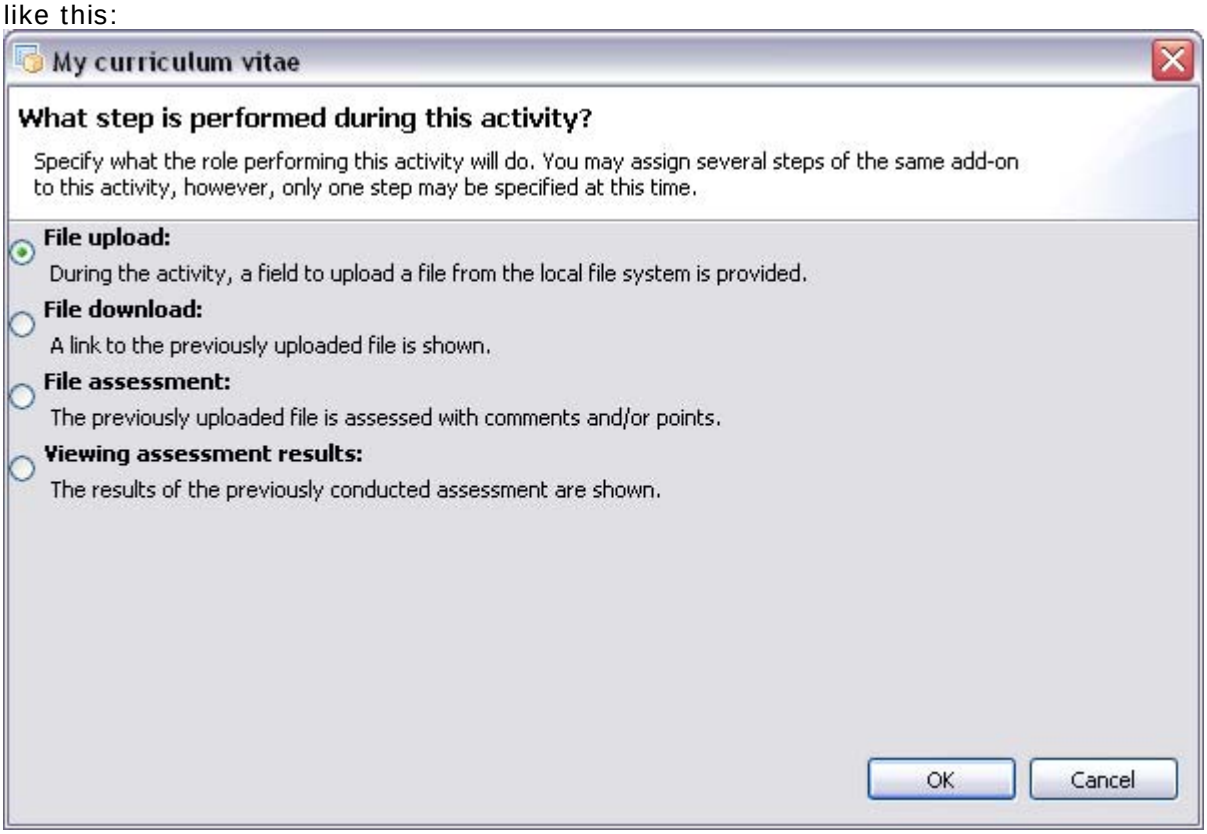
   A) When you created the add-on via the instances tree, you will see your new add-on as a sub-element in the instances tree:



   Drag & drop the newly created add-on (e.g. “My curriculum vitae”) onto an activity in the workspace, during which you want to use the add-on, in this case, the activity during which the file will be uploaded. You will then see a dialog similar to the one that is shown in the next picture below.

   B) When you created the new add-on within the *Edit Activity Dialog*, you will be

automatically taken to a new dialog that asks you to specify the add-on. The dialog looks like this:

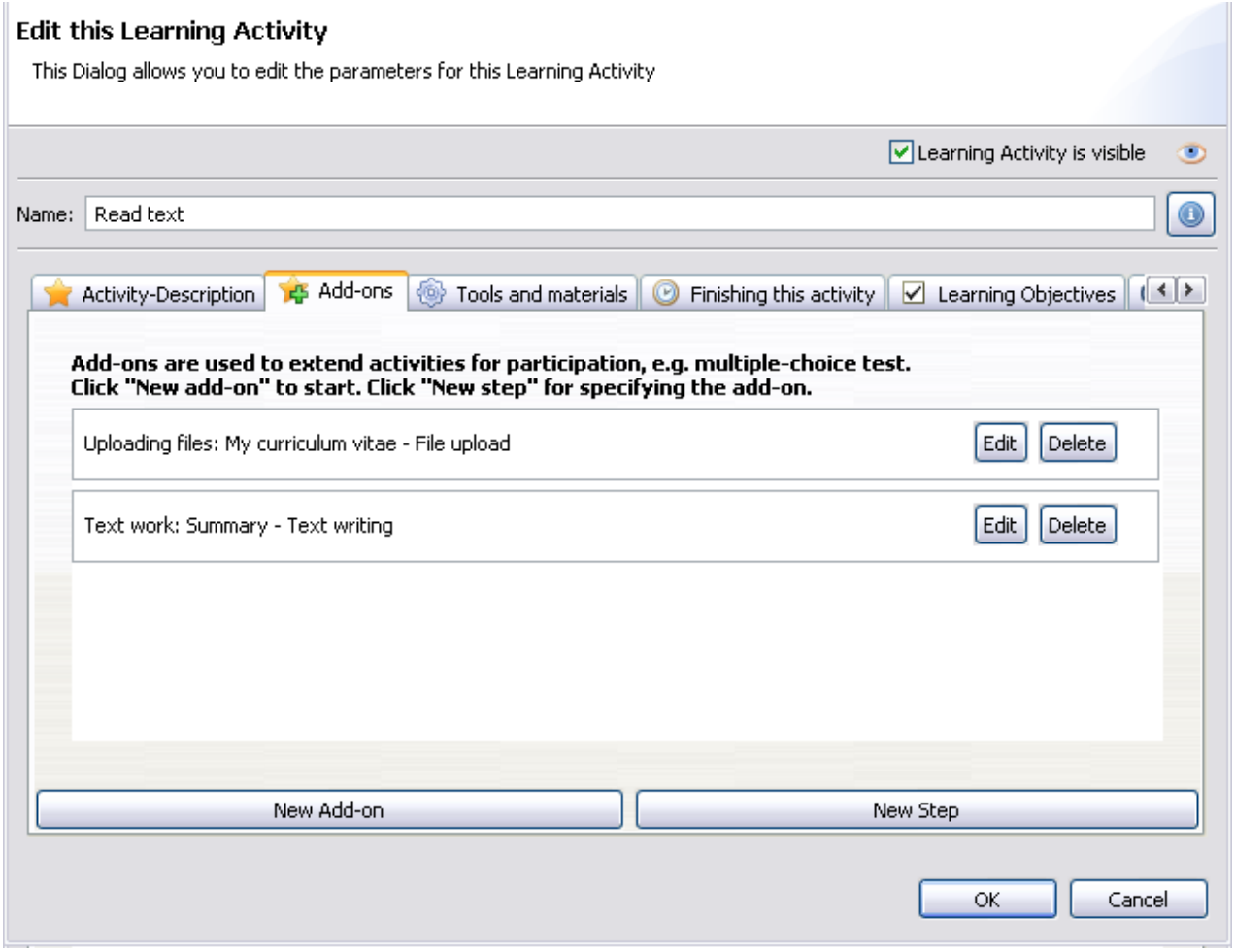

My curriculum vitae
What step is performed during this activity?
Specify what the role performing this activity will do. You may assign several steps of the same add-on to this activity, however, only one step may be specified at this time.
File upload:
During the activity, a field to upload a file from the local file system is provided.
File download:
A link to the previously uploaded file is shown.
File assessment:
The previously uploaded file is assessed with comments and/or points.
Viewing assessment results:
The results of the previously conducted assessment are shown.
OK
Cancel

The types of specific steps that are to be performed during this activity are listed here. Select one of the steps and click OK. Depending on the step you chose, you will see a new dialog that usually asks you to enter instructions, or customize further.

2. A) If you dragged & dropped your add-on from the instances tree onto the activity, you finish the specifying of the add-on by clicking OK. You then recognize that the count for the activity's add-on symbol has gone up (in the example below the symbol for add-on now shows "1"):

To confirm that your specific step for the add-on was registered at the activity, double-click the activity and select the tab "Add-ons". You then see a list of all specific add-ons assigned to this activity, much like is shown in the next picture below.

B) If you created and specified a new add-on within an *Edit Activity Dialog*, you will be automatically returned to the *Edit Activity Dialog*, where you can see a list of all add-ons that have been added to this activity. The list looks similar to the one depicted below:

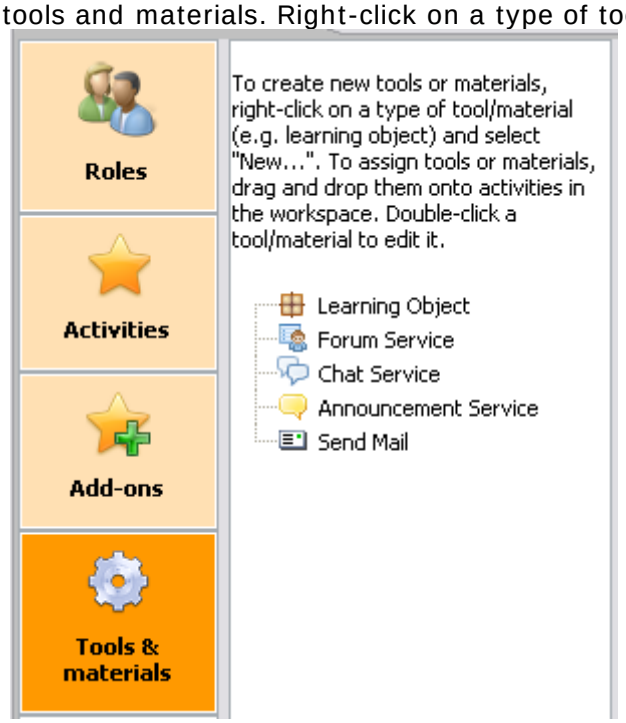


The items in the list are described with the type of add-on (e.g. “Uploading files”) followed by the name of the add-on that you gave it (e.g. “My curriculum vitae”), and last is shown the specific step that is performed during this activity (e.g. “File upload”).

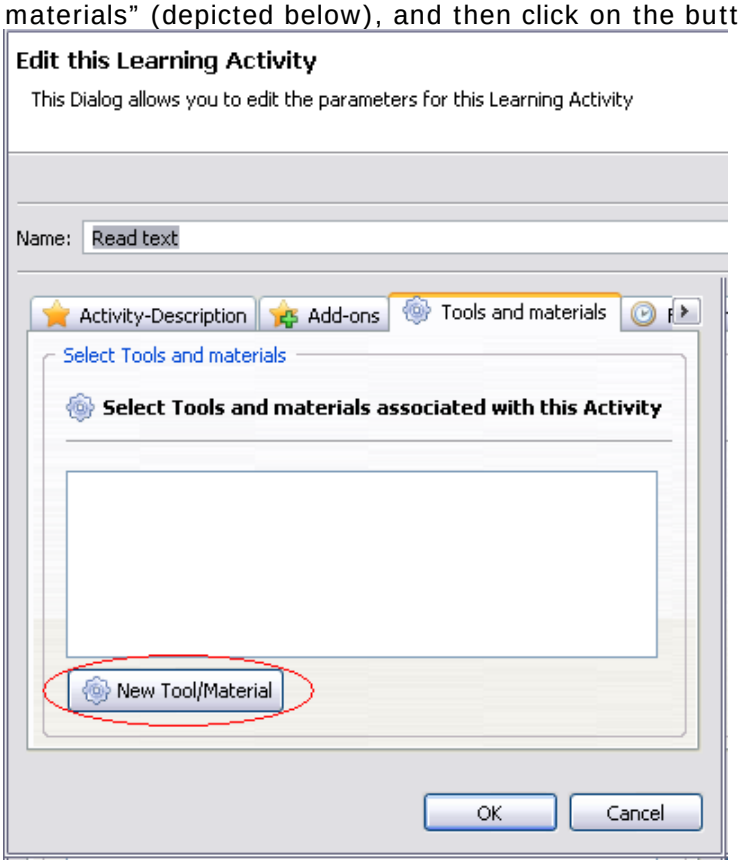
Each activity may have several add-ons and several steps of the same add-on. However, you may not add the same step of an add-on to the same activity twice (e.g. you may not add the step “text writing” of the add-on “Summary” twice to the same activity, but you may add the step again to another activity).

3.7 Tools & Materials

1. There are two ways to create new tools & materials.
   A) By clicking the “Tools & materials” tab in the left navigation. You then see the types of tools and materials. Right-click on a type of tool/material and select “Create New…”.

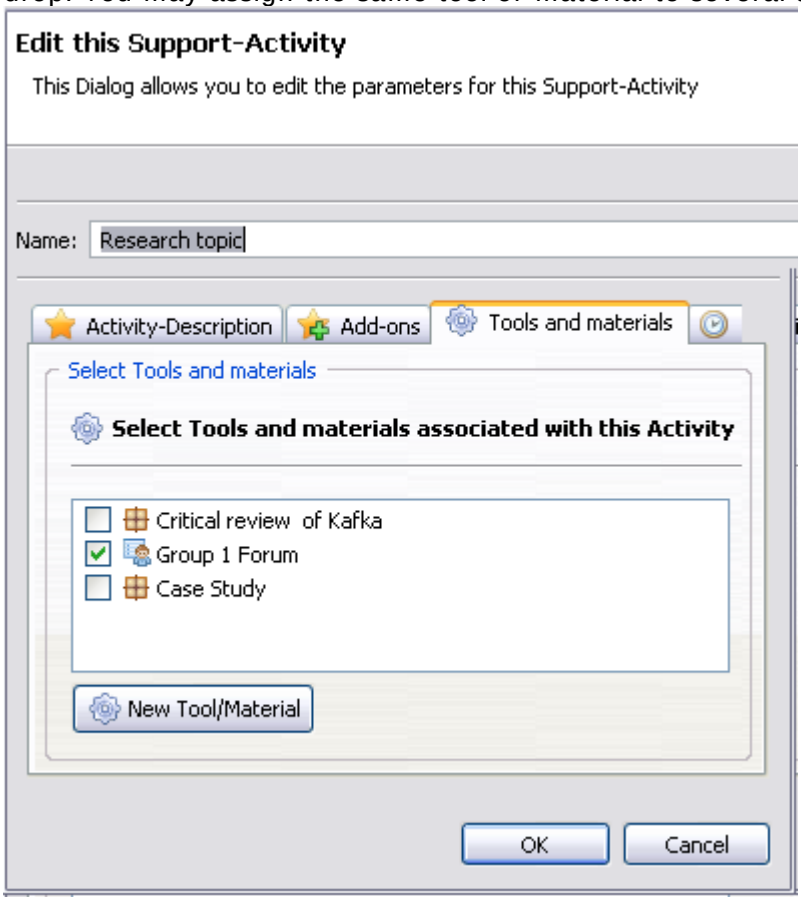

Roles
Activities
Add-ons
Tools & materials
To create new tools or materials, right-click on a type of tool/material (e.g. learning object) and select "New...". To assign tools or materials, drag and drop them onto activities in the workspace. Double-click a tool/material to edit it.
Learning Object
Forum Service
Chat Service
Announcement Service
Send Mail

   B) Alternatively, you can create new tools & materials directly in the *Edit Activity Dialog* (double-click an activity in the workspace to open the dialog). Select the tab “Tools and materials” (depicted below), and then click on the button “New Tool/Material”.



2. A) Once you created a new tool/material, you may drag & drop it from the instances tree ONTO activities in the workspace to assign it.

   B) If you created the tool/material directly in the Edit Activity Dialog, it is already assigned to the activity, from it was created. There is no need for an additional drag & drop. You may assign the same tool or material to several activities.

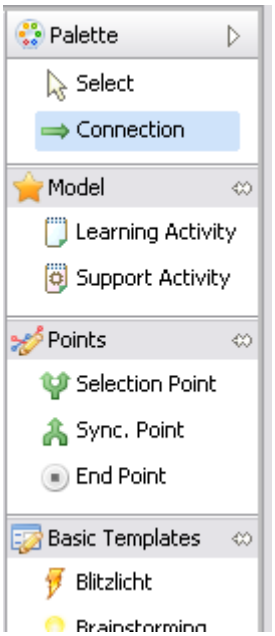


You recognize the tools/materials that are attached to this activity by the ☑ in front of each assigned tool/material. You may check the boxes of other tools/materials in order to assign them to this activity.

3.8 Connections/ Building a sequence of activities

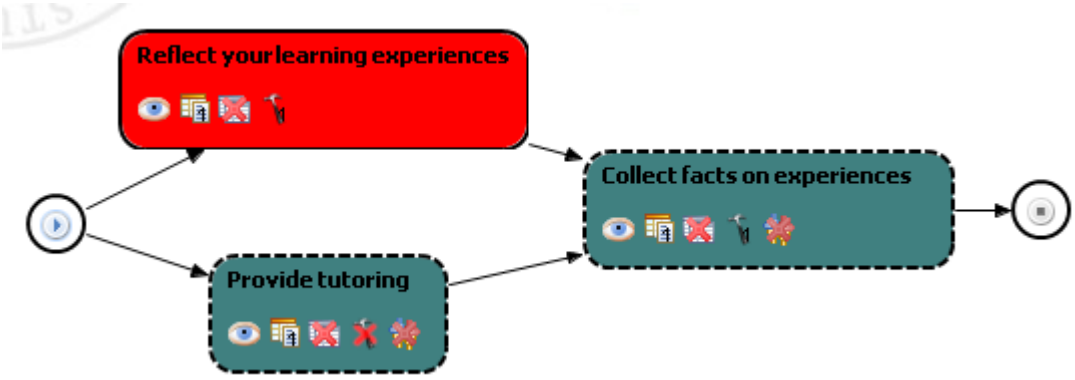
1. All activities and points must be part of a sequence between the start point ⊙ and the end point ◎. This means that all activities, selection points, and synchronisation points MUST have at least one connection going in and one connection leaving. Exceptions are the start point and the end point.

2. Draw connections between activities and points by selecting “Connection” from the Palette. Your cursor then changes to a little plug to indicate that you are in the connection modus.



Then, first click in the middle of the preceding activity (or point), and then click on the successive activity (or point). Your connection will be drawn instantly.

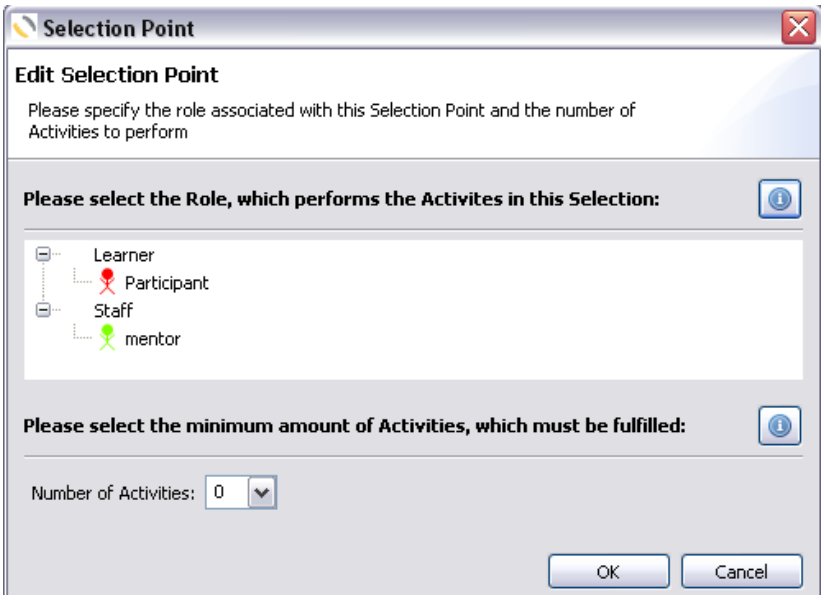
3. For concurrent activities, i.e. activities that are taking place at about the same time, create parallel activity strands as shown in the picture below. In the example, the activities “Reflect your learning experiences” and “Provide tutoring” are running parallel at the same time, while the activity “Collect facts on experiences” starts after the two previous activities are finished.



3.9 Selection Point

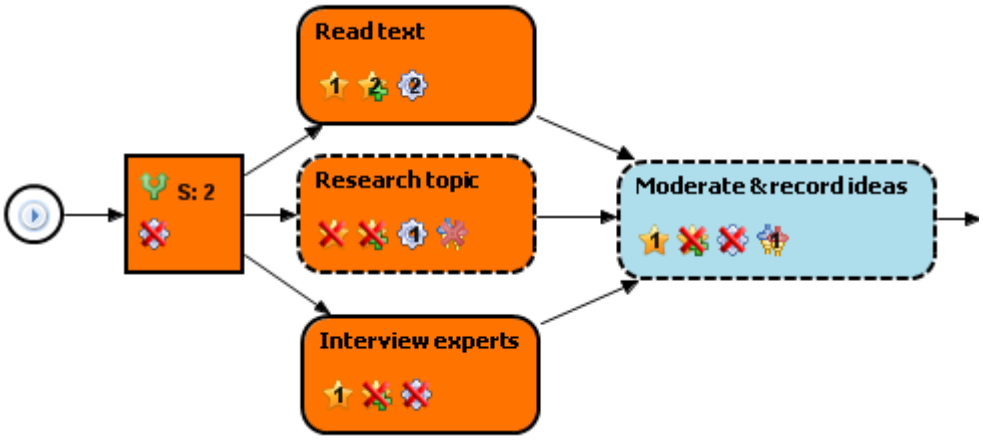
1. The selection point is used to provide one role the opportunity to choose between several activities. You as the learning designer determine what activities are up for choice by connecting those activities to the selection point.

2. From the Palette, drag & drop the “Selection Point” onto the workspace. You will then see the following dialog:


Selection Point
Edit Selection Point
Please specify the role associated with this Selection Point and the number of Activities to perform
Please select the Role, which performs the Activites in this Selection:
Learner
Participant
Staff
mentor
Please select the minimum amount of Activities, which must be fulfilled:
Number of Activities:
0
OK
Cancel

Here, you must select the role that will choose among the activities. Also, at the bottom of this dialog, specify the number of activities that the role will have to finish before proceeding with the learning sequence. The number you specify may not be larger than the number of activities connected to the selection point.

3. When using the selection point, you must connect all activities up for choice to this selection point (see picture below). Start the connection at the selection point, and then click on the activity to be connected, i.e. an activity that is up for choice. All activities that are directly connected to the selection point are up for choice.



All activities tied to the selection point must have a connection going out of them to the next reference point or activity that follows the selection (e.g. all activities that are part of the selection connect to the next activity in the sequence, which is “Moderate & record ideas” in the picture above).

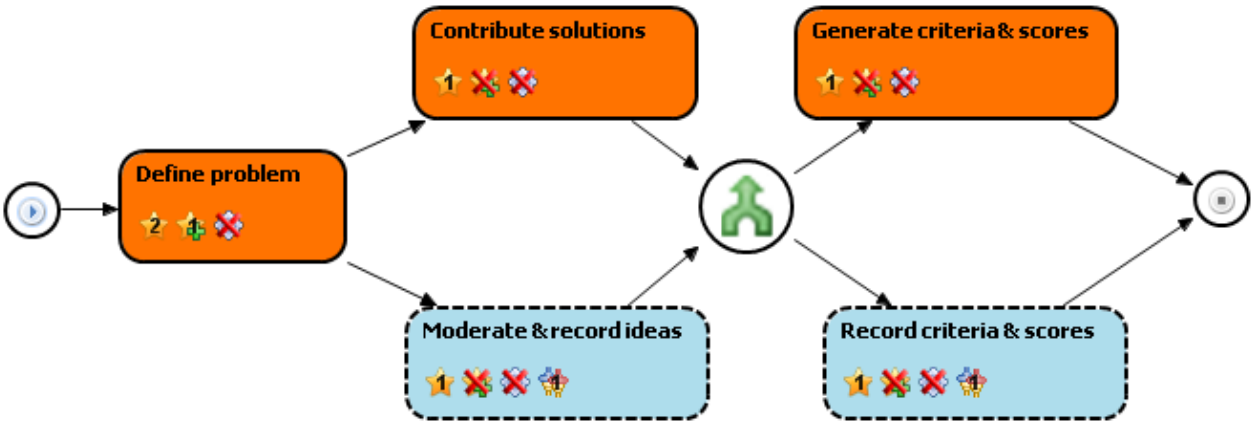
4. To change the role that chooses between the activities, drag & drop a role from the instances tree onto the selection point. All connected activities will immediately take on the colour of that role.

5. To edit the settings of the selection point, double-click the selection point.

3.10 Synchronisation Point

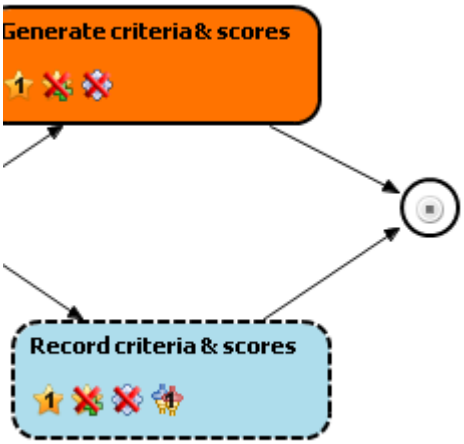
1. The purpose of the synchronisation point is to continue the learning sequence only when ALL activities before it have ended. This may be useful when there are several strands of different activities going on, and everybody needs to get back together to commonly start a new set of activities. In this regard, a synchronisation point allows a common start.

2. Drag & drop the synchronisation point from the Palette onto the workspace. To use the synchronisation connect all activities that need to be synchronised to the synchronisation point. The learning sequence continues from the synchronisation point.



3.11 End Point

1. End your learning design sequence by drawing connections from the last activity or activities to the end point. Drag & drop the end point from the Palette onto the workspace.



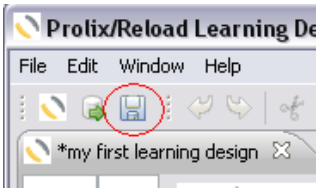
2. The end point may only have arrows going into it. No arrows can be drawn away from it.

3. There may only be one end point for the entire learning design.

3.12 Convert your learning design into a unit of learning package (IMS Learning Design)

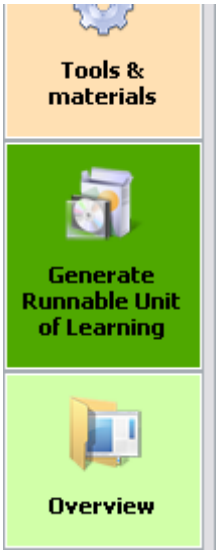
1. The GLM provides the possibility to create so-called units of learning that are conformant to the IMS Learning Design specification[2]. The GLM is capable of interpreting the graphical learning design you built, while automatically detecting the needed elements to create the unit of learning package.

2. Before exporting, you should save your learning design. Click on the "Save" symbol in the top menu bar, or press the keys Ctrl+S.



3. It is important to quickly check three things before trying to export:
   - All activities and points in the workspace need to have a **connection** going into them and going out of them. The sequence between start and end point must be complete (no dead-ends).
   - All activities need to have at least one **activity description**, i.e. there may <u>not</u> be any crossed out activity description symbols in the activity boxes ( ).
   - All activities need to have a **role** assigned to it.

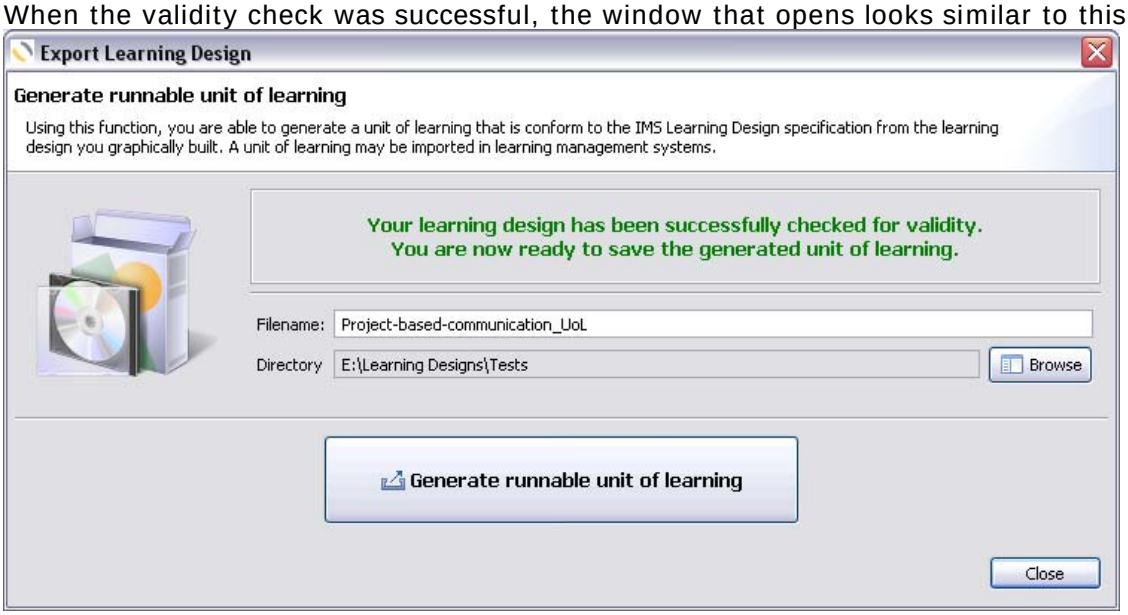
4. Click on the "Generate runnable unit of learning" tab in the main navigation menu on the left.



The GLM now automatically checks whether your learning design fulfils all needed criteria to build the IMS Learning Design unit of learning. You will be informed of the results of this check.

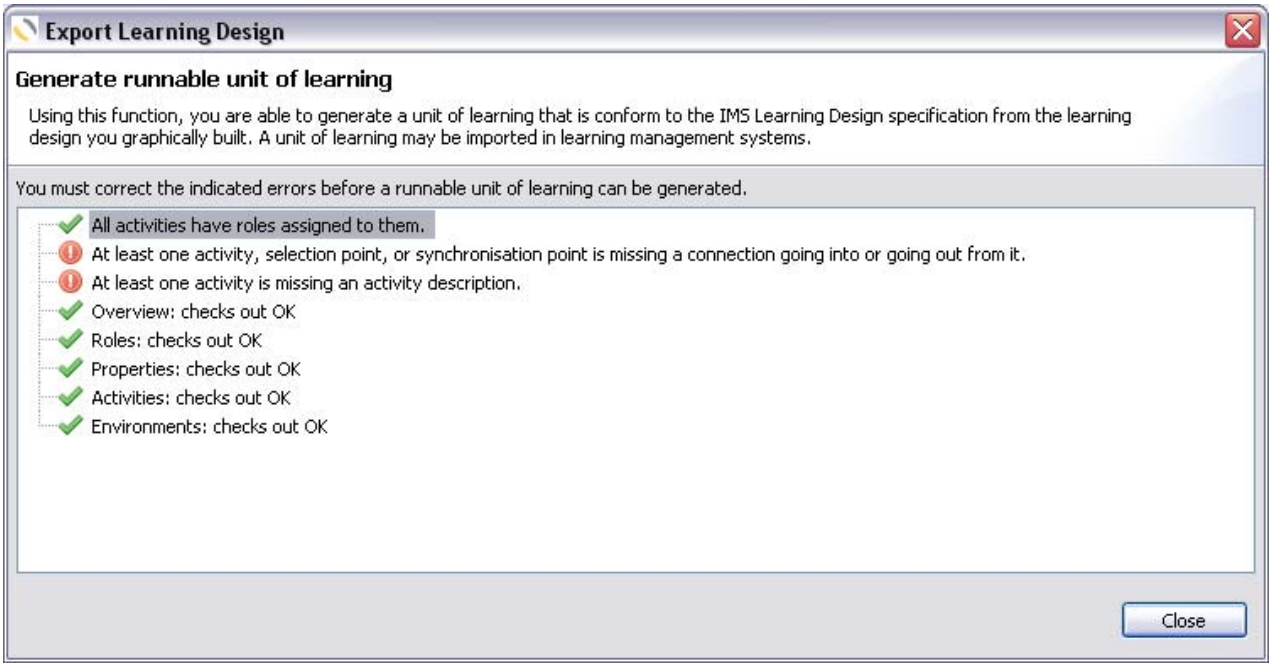
[2] http://www.imsglobal.org/learningdesign/

5. When the validity check was successful, the window that opens looks similar to this:


Export Learning Design
Generate runnable unit of learning
Using this function, you are able to generate a unit of learning that is conform to the IMS Learning Design specification from the learning design you graphically built. A unit of learning may be imported in learning management systems.
Your learning design has been successfully checked for validity.
You are now ready to save the generated unit of learning.
Filename: Project-based-communication_UoL
Directory E:\Learning Designs\Tests
Browse
Generate runnable unit of learning
Close

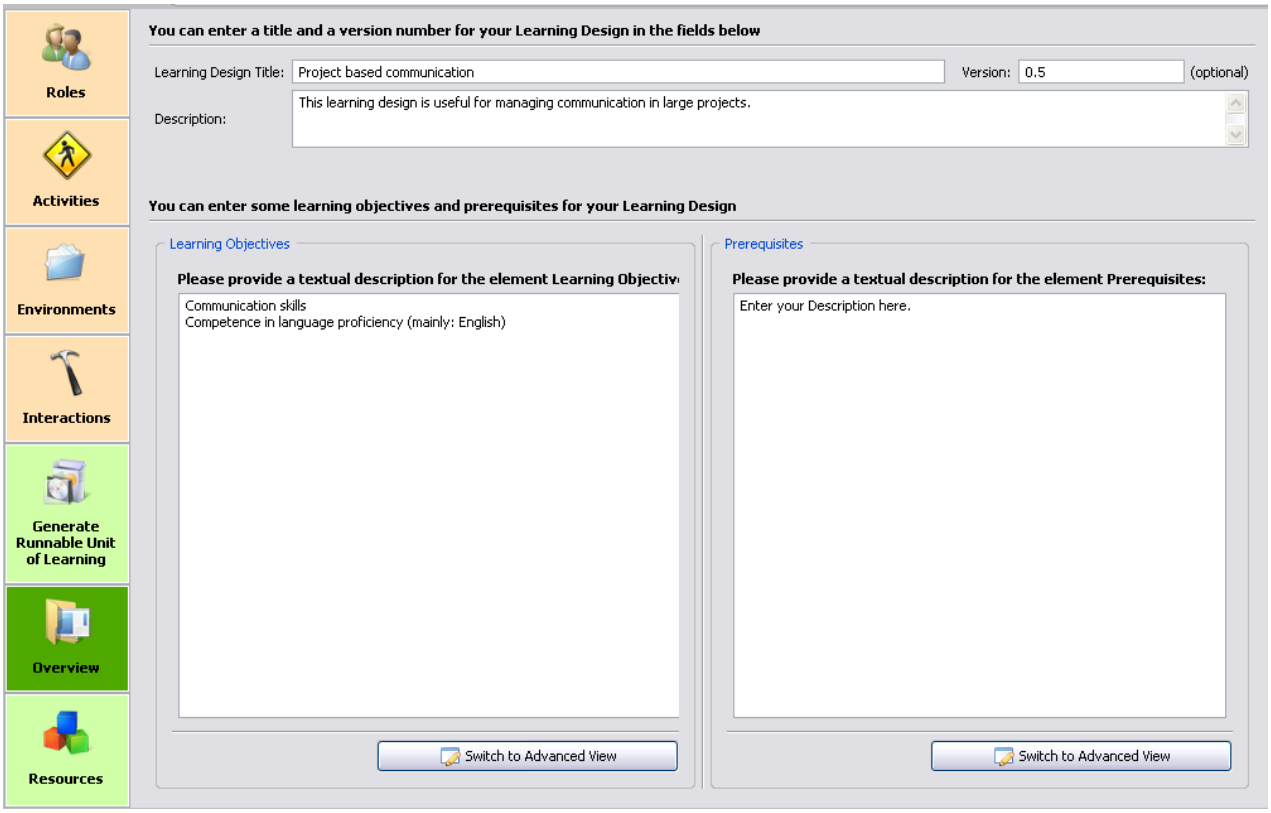
You may change the name and saving location for the unit of learning. Click on the button "Generate runnable unit of learning" in order to finalise the export.

6. In case your learning design was not successfully checked for validity, you will receive a list of checks that the GLM performed and an indication, which of these checks were not successful. In this case, fix the missing elements, and try again.


Export Learning Design
Generate runnable unit of learning
Using this function, you are able to generate a unit of learning that is conform to the IMS Learning Design specification from the learning design you graphically built. A unit of learning may be imported in learning management systems.
You must correct the indicated errors before a runnable unit of learning can be generated.
All activities have roles assigned to them.
At least one activity, selection point, or synchronisation point is missing a connection going into or going out from it.
At least one activity is missing an activity description.
Overview: checks out OK
Roles: checks out OK
Properties: checks out OK
Activities: checks out OK
Environments: checks out OK
Close

3.13 Learning Design Overview

You may enter additional information about your learning design by using the “Overview” button in the main navigation menu. The following window will open:

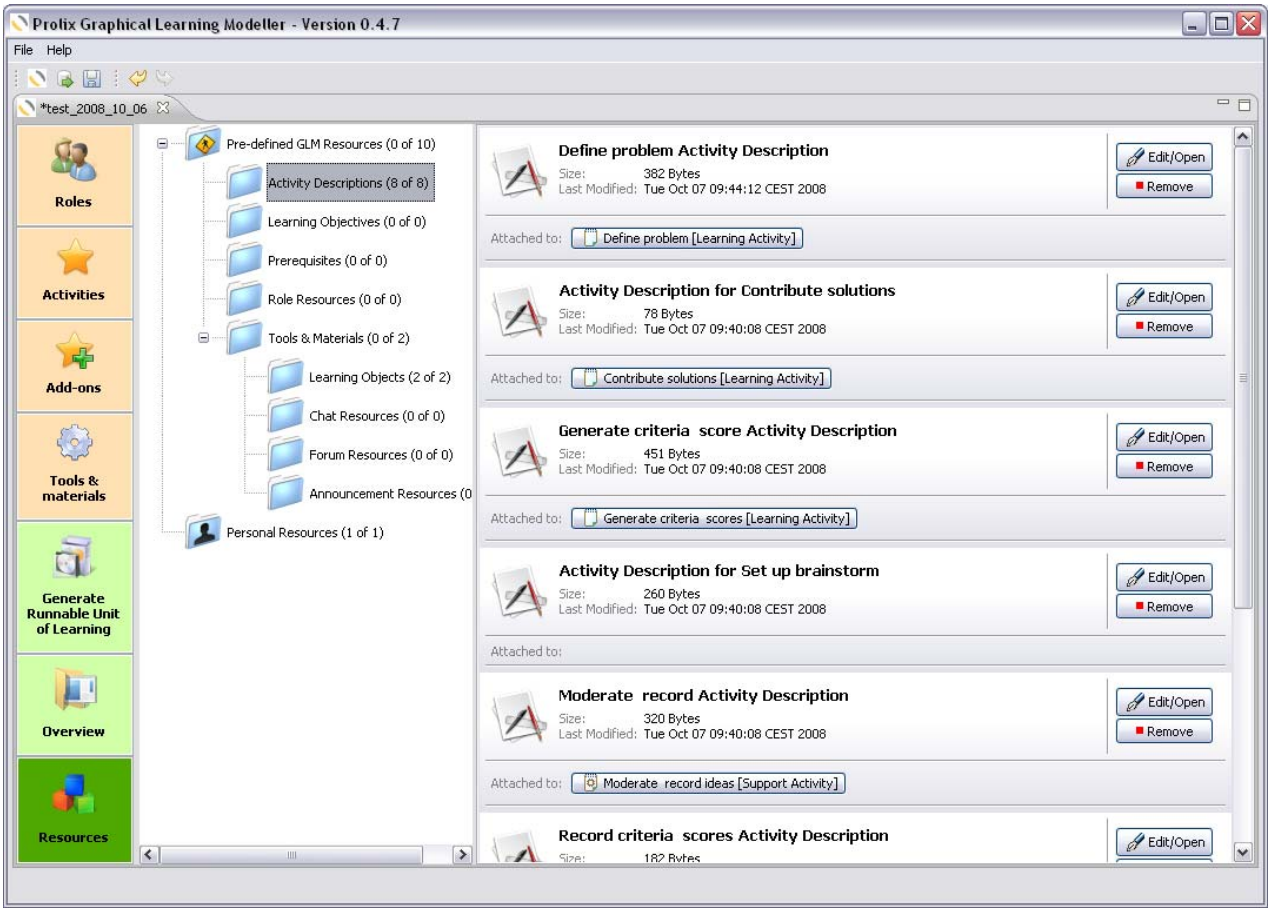

Roles
Activities
Environments
Interactions
Generate Runnable Unit of Learning
Overview
Resources
You can enter a title and a version number for your Learning Design in the fields below
Learning Design Title:
Project based communication
Version:
0.5
(optional)
Description:
This learning design is useful for managing communication in large projects.
You can enter some learning objectives and prerequisites for your Learning Design
Learning Objectives
Please provide a textual description for the element Learning Objectiv
Communication skills
Competence in language proficiency (mainly: English)
Switch to Advanced View
Prerequisites
Please provide a textual description for the element Prerequisites:
Enter your Description here.
Switch to Advanced View

Here you have the chance to provide a title, description and a version number for your learning design. The title and description of the learning design (entered on top) will be written in a special section of your unit of learning (upon export) so that this information can be recognised as LOM metadata by learning management systems, repositories, and other learning design editors.

Furthermore, you may specify here learning objectives and prerequisites that regard the entire learning design.

3.14 Resources section

All descriptions, files, learning objects and so forth that are used within the learning design can be managed using the Resources section of the GLM. Click on the bottom tab “Resources” in the main navigation menu. You will be presented the following view:



You may edit individual resources here, upload additional files from your local file system, delete resources, or change their location to different folders. Right-click on any of the folders to see options for resource management.